

November 12, 2001



Fermilab

*BEAMS DIVISION/CRYOGENIC SYSTEMS
ENGINEERING and DESIGN GROUP*

Minutes from Friday, Nov 9 Muon Collider/Cryogenics Meeting

Place: Outfield Conference Room, MW9

Attendees: Alex Martinez, Barry Norris, Christine Darve, Arkadiy Klebaner, Dan Kaplan

Minutes Prepared by: Barry Norris

The following outlines the discussions that took place between Dan Kaplan and the BD/Cryo group.

1. The meeting began with Christine discussing the R11 configuration. Ed has shown 2 different nozzle arrangements – we will only look at straight nozzle arrangement since angled solution imposes pressure drop. Arrangement studied has 13 supply nozzles and 18 return nozzles.
2. Christine calculated pressure drops for the straight and curved nozzle arrangements just to verify our beliefs. ΔP straight = 0.12 psi while the ΔP curved = 0.60, or a factor of 5 times greater.
3. Next we discussed the total hydrogen volume of the absorber. Christine modeled this by taking an AutoCad drawing and putting it into Ideas. The volume looks smaller than the previously discussed 9 liters. It is 6.8 liters. Maybe the 9 liters came from the 15cm arrangement?
4. Christine states that she is moving on to calculate the required relief area to guarantee the windows do not break in catastrophic failure modes.

5. Important note: Dan K. has sent an email to Ed and Mary Anne that suggests we eliminate the 15cm test. Cryo is moving forward with this as being fact.
6. Christine points out that the drawing from 5/22/2001 called “11 cm Window Manifold Assembly” is not a valid heat exchange concept. It was however only a concept, and so Cryo will begin to work on the exchanger design.
7. Alex M. shows the Preliminary FESS drawing showing both buildings and all equipment. We are questioning the layout of the beam line system. Dan K. tells Cryo to seek the advise of Carol Johnstone and Milorad.
8. There are concerns about the pump that we have. It was not intended to work with such small pressure drop. Dan asks when will we know if pump will work? Cryo must understand this as it evolves out of real system design.
9. Discussion of control strategy. What happens when beam is off? Do we need heaters etc? Cryo will develop and present a possible controls strategy.

The next Muon Collider/Cryogenics meeting will be Friday November 16, 2001 at 10:30 in MW9.